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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/694,277
Filing Date: October 27, 2003
Appellant(s): BREWER, JASON M.

Stephen L. Levine (Reg. No. 33,413)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/12/06 appealing from the Office action mailed 7/13/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

Krause et. al.	US 5,590,285	Dec 1996	(referred to as Krause)
Templin et. al.	US 5,781,550	July 1998	(referred to as Templin)
Wright, Jr. et. al.	US 5,857,201	Jan 1999	(referred to as Wright)

Hoffman, et. al. IEEE 1394: A Ubiquitous Buss, IEEE, 1063-6390, 1995, p. 334-338 (Hoffman).

Request for Comments 903, Finlayson et. al., June 1984 (referred to as Finlayson hereafter)

(8a) CLAIM OBJECTION

1. Claims 46 and 70 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

(9) Grounds of Rejection

1. The following ground(s) of rejection are applicable to the appealed claims:

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 30-31, 42-45, 49-60, 66-69 and 73-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Templin et. al. US 5,781,550 (referred also as '550) in view of Request for Comments 903, Finlayson et. al., June 1984 (referred to as Finlayson hereafter).

Regarding claim 30, Templin teaches a ("link layer") gateway computer (550: col 4/lines 49-55, Fig. 1) operable to communicate a data packet (10) from a source host computer (150) selected from one of a

plurality of host computers coupled to a first "private/trusted" network medium (110) to a destination host computer (160) selected from one of a plurality of host computers coupled to a second "public/untrusted" network medium (120) (550: col 3/lines 65-col 4/line 12, gateway: col 1/lines 10-25, and col 2/lines 57-61);

a-b) a first network interface (231) and second network interface circuits (232) that enables connection of said computer to said first network second network, respectively (550: col 4/lines 29-32, 63-67, Fig. 2);

c) said computer has an assigned protocol address (550: col 2/lines 57-61), said computer has a computer protocol handler (302 of Fig. 3) and each host computer coupled to each respective network has a hardware physical address used to communicate therewith associated with its respective network interface circuits (col 1/lines 42-53, 63-column 2/line 9);

d) responsive to either of the first and second circuits receiving a data packet (10) (550: col 5/lines 45-48), the computer protocol handler (302) (550: col 4/lines 29-32) on said computer evaluates the header (20) of said received data packet (10) comprising a destination protocol address (550: col 6/lines 10-22 and col 7/lines 31-35);

e) the computer protocol handler is responsive to the received data packet if the destination protocol address belongs to the computer (col 6/lines 10-22, col 7/lines 31-35) and determining that the destination protocol address does not correspond to the assigned address of the computer (column 7, lines 42-51);

f) the computer is programmed to execute a link layer protocol handler (303 of Fig. 3) coupled to communicate with each of the first and second network interface circuits (column 5, lines 45-54);

g) response to either one of the network interface circuits receiving a data packet comprising an "address pairing communication", i.e. data packet having a source and destination address (column 3, lines 13-20) the link layer protocol handler (303) evaluates the destination address received therein (col 7/lines 14-16);

h) responsive to determining that the destination protocol address does not correspond to the assigned address of the computer (col 7/lines 14-16, 43-44), determining if a source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either first or second network medium (col 6/lines 41-44, 57-65, i.e. proxy disposition with the source host computer is from the first network medium received via network interface of the computer and the destination protocol address is on the second network medium based on the Internet layer addresses of the received packet column 6, lines 31-40);

responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first or second network medium, the link layer protocol handler communicates a reply data packet to the source host computer, storing both the protocol addresses between host computers sessions from transmitted received data, where the host computers and are not on the same one of either first or second network medium (column 8, lines 25-37);

(i) responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first or second network medium, the link layer protocol handler communicates a reply data packet to the source host computer, where the data packet reply comprises the destination protocol address and a hardware physical address corresponding to the network interface circuit coupled to the same network medium as the source host computer which transmitted the received packet;

Specifically, Templin discloses a first computer configured to determine the physical address of second computer, by sending a request using the IP address of the second computer; the second computer responsive to recognizing its address replies providing its physical address to the first computer (column 1, lines 59 to column 2, line 2); and *where a hardware physical address corresponding to the network interface circuit coupled to the network medium as the source host computer which transmitted the received packet.*

However Templin does not disclose communicating a reply data packet to the source host computer, where the data packet reply comprises the destination protocol address and a hardware physical address to the source host computer;

Finlayson discloses where the reply comprises the destination protocol address and a hardware physical address of the source host computer which sent the received packet. Specifically, sending a request to determine the protocol address of a device given the hardware address of the device, namely by, sending a request containing the hardware address of the sender "ar$sha" and "ar$tha", respectively, (see p. 3). Finlayson states that that in the particular case, where the sender wishes to determine his own protocol address, the "as$sha" field of the request will be the hardware address of the sender (see p. 3).

Finalyson teaches where the reply comprises the hardware and protocol address of the responder as well as the hardware and protocol address requested, denoted "ar$sha" and "ar$spa", respectively (see page 3). Specifically, communicating a reply data packet to the source host computer which transmitted a received data packet comprising an "address pairing communication", i.e. a data packet comprising a source and destination address, specifically where the data packet reply comprises: the hardware address

of the target "ar$tha", the protocol address of the target "ar$tpa", the hardware address of the source host computer "ar$sha" and the protocol address of the source host computer "ar$spa" (see page 3).

It would have been obvious to one ordinary skilled in the art at the time the invention was made given the suggestions of Templin to use of address-pairing communication for determining addresses, the disclosure of Finlayson performing address resolution protocol communications would have been readily apparent. One would be motivated given the suggestions of Templin for learning the learning the true IP addresses of end-points of a communication session traversing the gateway computer to further store the hardware address to protocol address mapping for responding to request from the host computers, where a small cache outside the kernel makes a general facility that can correlating hardware addresses to any higher level protocol address with minimal impact on the existing host software, as suggested by Finlayson. Further suggesting that the response contain also the requested/target hardware and protocol address as well as the replier's hardware and protocol address for instances in which both ARP and RARP are used, this inclusion of the valid "protocol-hardware address pair" would eliminate the need for any further address request, as suggested by Finlayson.

Regarding claim 31, the link layer gateway computer operable to communicate a data packet from a source host computer selected from one of said plurality of host computers coupled to said second network medium to a destination host computer selected from one of said plurality of host computers coupled to said first network medium (**550**: col 2/lines 62-65).

4. Claims 32, 35-36 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Templin in view of Finlayson in further view of Krause et. al. (US 5,590,285) (referred to as '285 hereafter).

Regarding claim 32, 35-36 and 61, however Temple does not explicitly teach wherein said first or second network medium is local area network, a wide area network, and an Ethernet network.

Krause teaches an ("link layer gateway computer") IS computer for interconnecting a first and second network (e.g. local and remote LANs) each having a respective first and second transmission medium and computers attached thereto (e.g. PCs, etc) and enable communication between the computers from one network to another (285: col 1/lines 10-col 2/line 20 and col 3/lines 20-40, col 8/lines 63-col 9/line 11 and Fig. 2 & 4) further teaching

wherein said first or second network medium is local area network, a wide area network (285: col 8/lines 53-55, Fig. 4), an Ethernet network (285: col 15/lines 24-30).

It would have been obvious to one ordinary skilled in the art at the time the invention was made given the teachings for implementing his teachings without requiring modification on the host computers on the network and independent of there limitations, and without requiring the gateway computer to be a dedicated computer, the teachings of Krause would be readily apparent. One would be motivated to enable bridging, routing and brouting function on an expandable computer system multiple different types networks such as Ethernet token rings, token buses, FDDI, ISDN, etc.

5. Claims 33-34 and 62-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Templin in view of Krause in further view of Hoffman, et. al. IEEE 1394: A Ubiquitous Buss, IEEE, 1063-6390, 1995, p. 334-338.

Regarding claims 33-34, and 62-63, although the prior art teach where one of the network medium is an Ethernet, it does not teach where one of the network mediums is a bus type, particularly, a standard IEEE 1394.

Hoffman teaches a interconnected networks including computers interconnected with IEEE 1394, including one computer on a first network medium communicating with another on a second network medium (section 4.1 p. 335-336), it would have been obvious to one ordinary skilled in the art at the time the invention was made given Templin teachings applicable to include host computers with limiting constraints interconnecting networks comprising bus type networks for coupling laptops would be readily apparent. One ordinary skilled in the art would be motivated to cover a broad spectrum of computers and peripherals supporting flexible topology including branching.

6. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Templin in view of Finlayson in further view Wright, Jr. et. al. (US 5,857,201) referred to as Wright hereafter.

Regarding claim 37, Templin does not explicitly teach where one of the network medium is a wireless network;

Wright teaches a gateway computer operable to communicate data from a one of a plurality of portable host computers coupled to a wireless network medium (col 5/lines 40-41) to a destination host computer (Fig. 1 and 2, col 6/lines 21-33).

It would have been obvious to one ordinary skilled in the art at the time the invention was a made given by Templin related to a client-server communication over the Internet including private networks, the teachings of Wright would be readily apparent. One would be motivated to include access to private

networks such as enterprise resource utilizing wireless computers enabling unlimited number of user connections over a variety of transmission medium transport networks concurrently.

Claims 38-41 (Canceled)

Regarding claim 42, the computer is programmed to execute an application program coupled to communicate with the computer protocol handler (550: Fig. 3, col 5/lines 60-62).

Regarding claim 43, responsive to receiving on the first or second network interface circuits a data packet comprising "a protocol communication" information, the link layer protocol handler evaluates a destination protocol address in the received data packet (550: col 6/lines 10-22 & col 7/lines 31-35); and

responsive to determining that the destination protocol address does not correspond to the assigned address of the link layer gateway computer (550: col 6/lines 10-23), the link layer protocol handler determines if a source host computer which transmitted the received data packet is on the first network and the destination host computer is on the second network, i.e. they are not on the same network medium (550: col 6/lines 44-44, 56-65), therefore the received communication information is to be forwarded to the destination host computer.

Regarding claim 44, wherein the computer protocol handler (302) is separate of the link layer protocol handler (303) (550: Fig. 3).

Regarding claim 45, wherein, responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are from a trusted network and untrusted network, respectively (550: col 5/lines 9-20), i.e. not from the same network mediums;

the link layer protocol communicates the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer, i.e. relays (550: col 4/lines 33-39, relays from a first network to second network, col 6/lines 41-46, 56-65).

Regarding claim 46, this claims has been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims (see above 8a).

Claims 47-48 (Canceled)

Regarding claim 49, as discussed on claim 30, a gateway interconnecting a first and second network (550: Fig. 1) and

configured to receive a data packet and determine with respect to received packet that said packet is destine to a host computer located on the second network coupled thereto through its respective second network interface circuit, said received packet from a source host computer located on the first network coupled thereto through its respective first network circuit interface (550; col 6/lines 41-44, 56-65);

said gateway configured to reply to the requester (source host computer) of an address pairing communication for information associated with a destination host computer, the reply comprising the source protocol and physical hardware address, the destination protocol and physical hardware address and the gateway protocol and physical hardware address (Finlayson: p. 3).

Regarding claim 50, this claim comprises the combined limitations of claims 30 and 45, same rationale of rejection is applicable.

Regarding claim 51, comprises the same limitations as discussed on claim 30, same rationale of rejection is applicable, a computer called a link layer gateway, comprising: a first protocol handler (320) coupling a first network interface circuit (231) to an application program (340) (550: Fig. 3);

a second protocol handler (321)coupling a second network interface circuit (232) to an application program (340) (550: Fig. 3); and

a link layer protocol (326) coupling said first protocol handler and said first network interface circuit to said second protocol handler and said second network interface circuit (550: Fig. 3).

Regarding claim 52, wherein said link layer protocol (326) is at the same hierarchical level as said first protocol handler (320) and said second protocol handler (321) (550: Fig. 3).

Regarding claim 53, wherein said link layer protocol is not part of an operating system of said computer (304) (550: fig. 3).

Regarding claim 54, wherein said link layer protocol is not part of the operating system of said computer and, therefore, executes independently of operating system protocols (550: col 4/lines 56-col 5/line 8, 285: col 5/lines 40-44).

Regarding claim 55, wherein said link layer protocol detects whether a data packet received on said first/second network interface circuit is addressed "intended" for a computer coupled to the other of said first network interface circuit and said second interface circuit (550: col 6/lines 10-22, col 7/lines 31-35).

Regarding claim 56, this claim is substantially the same as limitations on claims 41 and 45, same rationale of rejection is applicable.

Regarding claim 57, said data packet does not reach any application program of said computer (285: col 2/lines 50-56, col 3/lines 59-60, col 4/lines 50-55).

Regarding claim 58, wherein said first network interface is bi-directionally coupled to said first protocol handler (550: Fig. 3).

Regarding claim 59, wherein said first network interface is designed to receive a network medium different from the network medium to be received by said second network interface (550: col 5/lines 46-54, 285: col 6/lines 9-32).

Regarding claim 60, wherein said second network interface is bi-directionally coupled to said second protocol handler (550: Fig. 3).

Regarding claim 61, this claim is substantially the same as claim 32, same rationale of rejection is applicable.

Claims 64-65 (Canceled)

Regarding claims 66-69, and 73-74 these claims are substantially the same as claims 42-45, and 49-50, same rationale of rejection is applicable.

Regarding claim 70, this claim has been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims (see 8a above).

Claim Rejection under 35 U.S.C. 101

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 30-37, 42-46, 49-50 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 6,657,999 as further exemplified by Templin. Although the conflicting claims are not identical, they are not patentably distinct from each other for the reasons noted below.

Instant application No. 10/694,277 is an obvious variation of patent 6,657,999 (referred to as patent '999). In this case, claims 30-36, 42-46, 49-50 of the application have substantially the same element of claims 1-15.

Specifically, claim analysis provided shows where all the limitations of claim 30 of instant application can be found in claims 1, 5-6, 8, and 12-13 of the patent '999, and all the limitations of claim 31 of instant application can be found in claim 1 of the '999 patent. The mapping of the claims further shows where claims 34, 36, 32, 42, 44, 45, 46, 49, 50 of instant application are the same as claims 2, 3, 4, 7, 9, 10, 11, 14, 50 of the '999 patent, respectively.

The difference between claims 30-37, 42-46, 49-50 of the application and the patent '999 are suffice to render the invention of these claims of the application patentably distinct and/or

therefore substantially the same invention and/or a mere obvious variation of the patent '999. Namely, the claimed term "the IP protocol handler" on claims 6/9 of the patent '999 has been changed to recite "a link layer protocol handler" on claim 30/44 of instant application performing the same claimed function, thereby not distinct; the claimed term "destination IP address" of claim 6 of the patent '999 has been changed to "destination protocol address" on claim 30 of instant application performing the same claimed function, thereby not patentable distinct; the claimed term "data packet comprising and IP communication", from which a destination IP address is evaluated on claim 8 of the patent '999, has been changed to a "data packet" from which a destination protocol address is evaluated on claim 30 of instant application, not functionally distinct based on applied interpretation to "data packet" and "communication" and/or data packet comprising a communication. Further difference with respect to the claims in the patent and claims in instant application is the blocking limitation on claim 1 of the patent not present on instant application, namely, blocking the transmission of a received packet if addressed to a host computer on the same network.

It would have been obvious to one of ordinary skill in the art at the time the invention was made, that gateways interconnect networks, that computers sharing the same network address, e.g., hosts having the same netid called "local", can directly send and receive packets with each other without passing through a gateway, however, packets communicated between hosts not sharing the same "netid" must traverse a gateway (see Templin column 2, lines 3-9). One of ordinary skill would recognize that this is the principle of operation of gateways interconnecting networks, as noted by the prior art, and not an inventive aspect of appellant's invention. Thus, instant application which does not explicit disclose this blocking aspect in claimed gateway does not render it a distinct invention from the patent '999.

(10) Response to Arguments

A. Arguments regarding rejections under 35 USC §103

1. Regarding claim 30, 31-37 and 42-45, it is argued (p. 15 of VII Arguments) with respect to the Templin reference that the teachings in the background cannot be combined with the preferred embodiments, because the Templin BACKGROUND teaches away from the very items criticized by the reference, thereby discouraging the skilled artisan from combining those teachings with what is later set forth in the Templin DETAILED DESCRIPTION.

In response to the above-mentioned arguments, applicant's interpretation of the applied prior art reference has been fully considered.

In accordance with MPEP §2123: "PATENTS ARE RELEVANT AS PRIOR ART FOR ALL THEY CONTAIN". "The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain." In re Heck, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting In re Lemelson, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including non-preferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). See also Celeritas Technologies Ltd. v. Rockwell International Corp., 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998) (The court held that the prior art anticipated the claims even though it *taught away* from the claimed invention. "The fact that a modem with a single carrier data signal is shown to be less than optimal does not vitiate the fact that it is disclosed.").

II. NON-PREFERRED AND ALTERNATIVE EMBODIMENTS CONSTITUTE PRIOR ART. Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments. In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). In re Gurley, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994). A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc.,

721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) (see MPEP 2141.02 IV).

The Board's attention is directed to what the Templin reference discloses:

For the purpose of establishing a session and sending packets via the Internet, IP address to physical address binding is accomplished with an address resolution protocol (ARP). The ARP works as follows. A host A that wants to resolve an IP address I_c of a host C broadcasts the address I_c over the locally attached network using a specialized request control packet. As a courtesy, the Host C, in response to seeing its IP address I_c, replies its physical address P_c. Host A can subsequently use the physical address P_c to communicate directly with Host C. Packets communicated between host on different network, i.e. not sharing the same NetID uses a gateway using the physical addresses established by ARP (column 1, line 59 to column 2, line 9).

Thus, in *prior art secure gateways*, untrusted portions of the network do not have direct access to trusted portions of the network. This form of *session proxying provides strong security* once a session is established, since client authentication is on a per session basis. However, such a session *is non-transparent because the establishment of the session requires a two-phased addressing operation on the part of the client. Since users need to know how to connect through the gateway, this creates an additional complexity for the client. Therefore, there is a* ***need*** *for a gateway which provides strong security, as well as transparent operation"* (column 2, line 66 to column 3, line 9).

The detailed description of preferred embodiment in the Templin reference seems to address noted deficiencies of the prior art and provide a solution thereto.

The Templin further discloses:

As an *advantage* of the invention, this enables the trusted computer to transparently communicate with the untrusted computer (column 3, lines 37-40). The gateway (B 300) provides a traversal scheme which **combines** the *transparency* of packet screening *with the strong security features of session proxying* (column 4, lines 25-28). The gateway 300 as described herein **allows both** *transparent and non-transparent* gateway traversal. The processes and data structures described herein can be ***incorporated*** *into traditional gateway infrastructures without requiring costly modifications of application software, and significant retraining for the user community* (column 9, lines 13-18). Additionally, the gateway 300, according to the

invention, can support **both** *transparent and non-transparent operations*, since flags field 415 of the control block entry 410 of the session indicates the correct mode of operation (column 8, lines 58-62).

Thus, Templin [AS BEST UNDERSTOOD] discloses an invention which addresses the noted non-transparency issues/deficiencies of the prior art, the gateway B 300 in the preferred embodiment provides a traversal scheme which combines the transparency of the packet screening with the security features of session proxying, as well as prior art's ARP mechanism, i.e. IP address to physical address binding which accomplished with an address resolution protocol (ARP), which is used to enable a host determine or resolve the IP address I_c of another host C.

Appellant's arguments have been considered, however, it is not clear from the reference's disclosure where *explicitly Templin discourages an skilled artisan from combining the teachings of the prior art with his inventive concept/improvement.* It is not clear where the deficiencies *(characterized by Appellant as criticism)* explicitly teach away from the prior art, since the Templin's preferred embodiment seems to incorporate features and/or aspects of the prior art.

2. Regarding claim 30, 31-37 and 42-45, it is argued (p. 18-19 of VII Arguments), that the applied reference, namely, Finlayson is not at all directed to the "hardware" recited in claim 30, namely, "link layer gateway computer operable to communicate a data packet from a source host computer selected from one of a plurality of host computers coupled to a first network medium to a destination host computer selected from one of a plurality of host computers coupled to a second network medium", because, according to Appellant, the Finlayson reference deals with the relationship between a workstation and a server.

In response to the above-mentioned argument, appellant's interpretation of the applied prior art reference has been considered. However, a) according to the invention's field of endeavor, instant application broadly states that "[T]the present embodiments relate to computers and computer networks" (specs p. 1, lines 10-11). "A Reverse Address Resolution Protocol" by Finlayson et. al. relates to network hosts, e.g. workstations discovering their protocol address

from some external source including resolving a host's hardware address given its protocol address, where as with ARP, we assume a broadcast medium, such as Ethernet".

Thus, the Finlayson reference is found to be within the invention's field of endeavor.

(b) In response to the argument that Finlayson is not at all directed to the hardware recited in claim 30, Office action (mailed 7/13/05) did not introduce the Finalyson reference to teach the mentioned hardware recited in limitation of claim 30 mentioned above, because this feature is already taught by the Templin reference. More specifically, Templin teaches a ("link layer") gateway computer (550: col 4/lines 49-55, Fig. 1) operable to communicate a data packet (10) from a source host computer (150) selected from one of a plurality of host computers coupled to a first network medium (110) to a destination host computer (160) selected from one of a plurality of host computers coupled to a second network medium (550: col 3/lines 65-col 4/line 12, gateway: col 1/lines 10-25, and col 2/lines 57-61); and a first network interface (231) and second network interface circuits (232) that enables connection of said computer to said first network second network respectively (550: col 4/lines 63-67, Fig. 2).

In this manner, the argued limitation is believed to be taught by the prior art of record.

3. Regarding claim 30, 31-37 and 42-45, it is argued (p. 19 of VII Arguments), that (1) there is no motivation to combine Templin and Finlayson; (2) there is no suggestion in Finlayson to combine it with Templin; and (3) the combination would not provide the resultant limitation set forth in claim 30, according to Appellant.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, regarding the motivation to combine the above-mentioned references

provided by either of the references argued points (1-2) mentioned above. Templin discloses that for the purpose of establishing a session and sending packets via the Internet, the IP address to physical address binding (i.e. address pairing) is accomplished with an address resolution protocol (ARP). Further, describing how ARP works (see column 1, lines 59-column 2, line 2). Finalyson indicates that ARP solves a complementary problem, resolving a host's hardware address given its protocol address, to his proposed reverse address resolution protocol (RARP). Thus both applied references address utilizing an Address Resolution Protocol (ARP).

Finalyson explicitly suggest that both ARP and RARP can work to together. Specifically disclosing that RARP be implemented as a separate protocol at the data-link level, where for example, if the medium used is Ethernet (as with ARP see introduction on p. 1), then RARP packets will have an Ethertype (still to be assigned) different from that of ARP. This recognizes that ARP and RARP are two fundamentally different operations, not supported equally by all hosts. However, the impact on existing systems is minimized because existing ARP servers will not be confused by RARP packets. It makes RARP a general facility that *can be used* for mapping hardware addresses to any higher level protocol address (see section III on page 2 on the Finalyson reference).

In this manner, arguments that there in no motivation to combine has been fully considered but not deemed persuasive.

In response to applicant's argument (3) that the combination would not provide the resultant limitation set forth in claim 30, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See Ex parte Obiaya, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

4. Regarding claim 46, it is argued (p. 20-21 of VII Arguments), that the applied reference does not teach claim limitation as recited. Specifically, that Templin does not teach "the protocol handler changes the hardware physical address to match the destination hardware physical address", because the cited portions do not show a hardware physical address.

In response to the above-mentioned argument, claims 46 and 70 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims (see 8a above).

5. Regarding claim 49, it is argued (p. 21-22 of VII Arguments), that the applied reference does not teach "*communicating an address paring data packet to the destination host computer designated by the destination protocol address*", because the communication of an address pairing data packet is to a completely different computer, namely, the destination computer, not the source computer, as interpreted.

In response to the above-mentioned argument, applicant's interpretation of the applied prior art has been noted. **Claim 30** has been reviewed:

...responsive to either of the first and second network interface circuits receiving ***a*** *data packet (this is a FIRST MENTIONED PACKET), the computer protocol handler evaluates a destination protocol address in the received data packet;...*

wherein, responsive to either of the first and second network interface circuits receiving ***a*** *data packet* (SECOND MENTIONED PACKET) *comprises an address pairing communication, the link layer protocol handler evaluates a destination protocol address in* ***the*** (SECOND MENTIONED PACKET) *received data packet;*

The argued limitation of **claim 49**, dependent from claim 30 above, reads

"*responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet* (SECOND MENTIONED PACKET), *address pairing communication) and the destination host computer designated by the destination protocol address are not on the same one of either the first or second network medium, the link layer protocol communicates an address pairing data packet* (THIRD MENTIONED PACKET) *to the destination host computer designated by the destination protocol address*";

Thus, claim 49 limitation reads, *communicating an address pairing data packet, i.e. data packet having a destination and source address, to the destination host computer designated by the designated by the destination protocol address, i.e. the destination host computer of the received data packet comprising an address pairing communication.*

Templin teaches *communicating a packet to the destination host computer designated by the destination protocol address* of a data packet received having a source and destination address.

Specifically, where the gateway receives a packet having a source address of the trusted computer (i.e. first network medium), a destination address, and a first payload. The packet, according to rules stored in a configuration database, is intercepted and diverted to a proxy server of the gateway if the destination address references an untrusted computer (i.e. second network medium). The proxy server extracts the payload from the packet, and generates a new packet having a source address of the gateway, the *destination address of the untrusted computer*, and the payload. As an advantage of the invention, this enables the trusted computer to securely communicate with the untrusted computer (column 3, lines 21-31).

Templin teaches that "each packet 10 includes payload 11 and an Internet (IP) header 20. The header stores source address information 21, destination address information 22, and protocol control information 23 in fields" (column 4, lines 10-20). Furthermore, the protocol stack provides the proxy server with a means of learning the true IP addresses of end-points of a communication session traversing the gateway. Using this information, the proxy server can securely proxy sessions between trusted and untrusted end-points, as well as "spoofing" the initiating end-point of the reverse path to enable transparent forwarding (column 4, lines 42-48),

In this manner, Templin teaches *communicating a packet to the destination host computer designated by the destination protocol address in a received data packet.*

6. Regarding claim 50, it is argued (p. 23 of VII Arguments), that the applied references do not teach claim limitation as recited. Specifically, where the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination IP address.

In response to the above argument, the response to argument 49, applying the interpretation of "address pairing data packet" as packet with a source and destination address. Same rationale and/or response to argument presented with respect to claim 49 is applicable.

7. Regarding claims 51, 2-63 and 66-69, it is argued (p. 23 of VII Arguments), that the same arguments presented for claim 30 are applicable.

In response to the above argument, the same response to the arguments presented for claim 30 are applicable in view of Appellant's rationale.

8. Regarding claim 70, it is argued (p. 24 of VII Arguments), that the applied reference do not teach claim limitation as recited. Specifically, "*prior to communicating the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer, the link layer protocol handler changes the hardware physical address* (i.e. from the packet received from the source computer, as recited earlier) *to match the destination hardware physical address*", because of the same argument presented above with respect to claim 46.

In response to the above-mentioned argument, claims 46 and 70 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims (see 8a above).

9. Regarding claim 73, it is argued (p. 24 of VII Arguments), that the applied reference does not teach claim limitation as recited. Specifically, that the references do not teach "*communicating an address paring data packet to the destination host computer designated by the destination protocol address*", for the reasons set forth above with respect to claim 49.

In response to the above-mentioned argument, the same response to arguments presented on claim 49 above, are then equally applicable in view of Appellant's rationale.

10. Regarding claim 74, it is argued (p. 24 of VII Arguments), that the applied references doe not teach claim limitation as recited. Specifically, "the link layer protocol communicates a reply data packet to the source host computer which transmitted the received data packet" and "the reply data packet comprises an address pairing" that comprises "the destination protocol address and a hardware physical address corresponding to a select one of the first network interface circuit or the second network interface circuit", and claim 74 further recites "the link layer protocol communicates an address pairing data packet to the destination host computer

designated by the destination protocol address", where this latter address pairing comprises "a source protocol address corresponding to the source host computer which transmitted the received data packet and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit."

The argument here presented, states according to Appellant, that for the reasons set forth above with respect to claims 30 and 73, the rejection of claim 74 should be reversed.

In response to the above-mentioned argument, at this outset, the response to arguments with respect to claims 30 and 73 are then equally applicable.

B. Regarding rejections under 35 USC §101

12. Regarding claims 30-37, 42-46, 49-50 and 55-56, 59 and 61-64 rejected under obviousness-type double patenting, it is argued (p. 25 of VIII Arguments) that the (a) differences between the invention defined by the conflicting claims and (b) the reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim(s) at issue would have been an obvious variation of the invention defined in the claim(s) of the patent has not been made.

In response to the above argument, the Boards attention is directed to mapping of claims and respective limitation(s) illustrated below. In this case, the analysis by which the mapping of claims 1-15 of the '999 patent with claims 30-36, 42-46 and 49-50 of instant application is illustrated, for example shows, where all the limitations of claim 30 of instant application can be found in claims 1, 5-6, 8, and 12-13 of the patent '999, and all the limitations of claim 31 of instant application can be found in claim 1 of the '999 patent. Further, this mapping also shows that claims 34, 36, 32, 42, 44, 45, 46, 49, 50 of instant application are the same as claims 2, 3, 4, 7, 9, 10, 11, 14, 50 of the '999 patent, respectively.

The difference with respect to the claims in the patent and claims in instant application is the blocking limitation on claim 1 of the patent not present on instant application, namely, blocking the transmission of a received packet if addressed to a host computer on the same network.

It would have been obvious to one of ordinary skill in the art at the time the invention was made, that gateways interconnect networks, that computers sharing the same network address, e.g., hosts having the same netid called "local", can directly send and receive packets with each other without passing through a gateway, however, packets communicated between hosts not sharing the same "netid" must traverse a gateway (see Templin column 2, lines 3-9). One of ordinary skill would recognize that this is the principle of operation of gateways interconnecting networks, as noted by the prior art, and not an inventive aspect of appellant's invention. Thus, instant application which does not explicit disclose this blocking aspect in claimed gateway does not render it a distinct invention from the patent '999.

The claim (30) limitation(s) of instant application upon Appellant relies upon, namely, "responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination *protocol* address are not on the same one of either the 1st network medium or the 2nd network medium, the link layer protocol handler communicates a reply data packet to the source host computer which transmitted the received data packet; the reply data packet comprises an address pairing; and the address pairing comprises the destination protocol address and a hardware physical address corresponding to a selected one of the fast network interface circuit or the 2nd network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet", are the same limitations of claim 13 and 15 of the '999 patent (see mapping).

In this manner, the based on the noted similarities and differences discussed above, between the invention defined by the conflicting claims and (b) the reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim(s) at issue it would have been an obvious that the invention defined in the claim(s) of the patent is an obvious variation of the noted claims of instant application.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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(attached: Double Patenting Analysis table)

US 6,657,999	Appln 10/694,277
1. A network configuration, comprising:	
	33. 1st or 2nd network medium is a 1394 network.
a 1st 1394 network medium;	
a plurality of host computers coupled to the 1st network medium; a 2nd network medium; a plurality of host computers coupled to the 2nd network medium;	31. a source host computer selected from one of said plurality of host computers coupled to said second network medium to a destination host computer selected from one of said plurality of host computers coupled to said first network medium.
a link layer gateway computer coupled to the 1st network medium and coupled to the 2nd network medium;	30. a first network interface circuit enables connection of said link layer gateway computer to said first network medium; and . a second network interface circuit enables connection of said link layer gateway computer to said second network medium;
said link gateway computer operable to communicate a data packet from a source host computer selected from one of the plurality of host computers coupled to the 1st network medium to a destination host computer selected from one of the plurality of host computers coupled to the 2nd network medium,	30. a link layer gateway computer operable to communicate a data packet from a source host computer selected from one of a plurality of host computers coupled to a 1st network medium to a destination host computer selected from one of a plurality of host computers coupled to a 2nd network medium, wherein:
said link layer gateway computer operable to communicate a data packet from a source host computer selected from one of the plurality of host computers coupled to the 2nd network medium to a destination host computer selected from one of the plurality of host computers coupled to the 1st network medium,	30. a link layer gateway computer operable to communicate a data packet from a source host computer selected from one of a plurality of host computers coupled to a 1st network medium to a destination host computer selected from one of a plurality of host computers coupled to a 2nd network medium,
said link layer gateway computer determining whether said data packet is addressed to a host computer on said 1st or 2nd network medium; and determining at said gateway computer whether said data packet is addressed to said gateway computer; and responsive to a positive determination communicating between said source host and said gateway computer.	31. the link layer gateway computer operable to communicate a data packet from a source host computer *selected* from one of said plurality of host computers coupled to said second network medium to a destination host computer selected from one of said plurality of host computers coupled to said first network medium.
blocking transmission of said data packet through said link layer gateway computer if said data packet is addressed to a host computer in the same network medium;	**NO BLOCKING**
2. the 2nd network medium is a local area network. (35)	34. one is network mediums is a local area network.
3. the 2nd network medium is a wide area network. (36)	36. 1st or 2nd network medium is a wide area network.
4. the 2nd network medium comprises an Ethernet network.	32. 1st or 2nd network medium is an Ethernet network.
5. wherein the link layer gateway computer comprises: a 1st network interface circuit coupled to the 1st network medium; and a 2nd network interface circuit coupled to the 2nd network medium.	30. a 1st network interface circuit enables connection of said link layer gateway computer to said 1st network medium; and 2nd network interface circuit enables connection of said link layer gateway computer to said 2nd network medium;
6. wherein the link layer gateway computer is programmed to execute an IP protocol handler coupled to communicate with each of the 1st and 2nd network interface circuits;	30.wherein the link layer gateway computer is programmed to execute a link layer protocol handler coupled to communicate with each of the 1st and 2nd network interface circuits;

wherein the link layer gateway computer has an assigned IP address; wherein, responsive to either of the 1st and 2nd network interface circuits receiving a data packet, the IP protocol handler evaluates a destination IP address in the received data packet; and wherein the IP protocol handler is responsive to the received data packet if the destination IP address corresponds to the assigned address of the link layer gateway computer.	30. the link layer gateway computer has an assigned protocol address and a computer protocol handler, responsive to either of the 1st and 2nd network interface circuits receiving a data packet, the computer protocol handler evaluates a destination protocol address in the received data packet; the computer protocol handler is responsive to the received data packet if the destination protocol address corresponds to the assigned address of the link layer gateway computer;
7. the link layer gateway computer is programmed to execute an application-program coupled to communicate with the IP protocol handler.	42. the link layer gateway computer is programmed to execute an application program coupled to communicate with the computer protocol handler.
8. the link layer gateway computer is programmed to execute a link layer protocol handler coupled to communicate with each of the 1st and 2nd network interface circuits;	30. the link layer gateway computer is programmed to execute a link layer protocol handler coupled to communicate with each of the 1st and 2nd network interface circuits;
wherein, responsive to either of the 1st and 2nd network interface circuits receiving a data packet comprising an IP communication, the link layer protocol handler evaluates a destination IP address in the received data packet; and	30. responsive to either of the 1st and 2nd network interface circuits receiving a data packet, the computer protocol handler evaluates a destination protocol address in the received data packet
wherein, responsive to determining that the destination IP address does not correspond to the assigned address of the link layer gateway computer, the link layer protocol handler determines if a source host computer which transmitted the received data packet and the destination host computer designated by the destination IP address are not on the same one of either the 1st network medium or the 2nd network medium.	30. responsive to determining that the destination protocol address does not correspond to the assigned address of the link layer gateway computer, the link layer protocol handler determines if a source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the 1st network medium or the 2nd network medium;
9. wherein the IP protocol handler is independent of the link layer protocol handler.	44. the computer protocol handler is independent of the link layer protocol handler
10. responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination IP address are not on the same one of either the 1st or 2nd network medium, the link layer protocol communicates the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer.	45. responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the 1st or 2nd network medium, the link layer protocol communicates the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer.
11. the received data packet further comprises a hardware physical address; the destination host computer comprises a network interface circuit coupled to the 1st or 2nd network medium; the network interface circuit of the destination host computer is responsive to a destination hardware physical address; and wherein, prior to communicating the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer, the link layer protocol handler changes the hardware physical address to match the destination hardware physical address.	46. the received data packet further comprises a hardware physical address; the destination host computer comprises a network interface circuit coupled to the 1ST or 2nd network medium; the network interface circuit of the destination host computer is responsive to a destination hardware physical address; and prior to communicating the received data packet from the network medium connected to the source host computer to the network medium connected to the destination host computer, the link layer protocol handier changes the hardware physical address to match the destination hardware physical address.

12. wherein the link layer gateway computer is programmed to execute a link layer protocol handler coupled to communicate with each of the 1st and 2nd network interface circuits;	30.wherein the link layer gateway computer is programmed to execute a link layer protocol handler coupled to communicate with each of the first and second network interface circuits;
responsive to either of the 1st and 2nd network interface circuits receiving a data packet comprising an address pairing communication, the link layer protocol handler evaluates a destination IP address in the received data packet; and wherein, responsive to determining that the destination IP address does not correspond to the assigned address of the link layer gateway computer, the link layer protocol handler determines if a source host computer which transmitted the received data packet and the destination host computer designated by the destination IP address are not on the same one of either the 1st network medium or the 2nd network medium.	30. responsive to either of the 1ST and 2ND network interface circuits receiving a data packet comprising an address pairing communication, the link layer protocol handler evaluates a destination protocol address in the received data packet; wherein, responsive to determining that the destination protocol address does not correspond to the assigned address of the link layer gateway computer, the link layer protocol handler determines if a source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the first network medium or the second network medium;
13. responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination IP address are not on the same one of either the 1st network medium or the 2nd network medium, the link layer protocol communicates a reply data packet to the source host computer which transmitted the received data packet;	30. responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the 1st network medium or the 2nd network medium, the link layer protocol handler communicates a reply data packet to the source host computer which transmitted the received data packet;
the reply data packet comprises an address pairing; and wherein the address pairing comprises the destination IP address and a hardware physical address corresponding to a selected one of the 1st network interface circuit or the 2nd network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet.	30.the reply data packet comprises an address pairing; and the address pairing comprises the destination protocol address and a hardware physical address corresponding to a selected one of the fast network interface circuit or the 2nd network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet.
14. responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination IP address are not on the same one of either the 1st network medium or the 2nd network medium, the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination IP address; and wherein the address pairing data packet comprises a source IP address corresponding to the source host computer which transmitted the received data packet and a hardware physical address corresponding to a selected one of the 1st network interface circuit or the 2nd network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the destination host computer.	49. responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the 1st network medium or the 2nd network medium, the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination protocol address; and the address pairing data packet comprises a source protocol address corresponding to the source host computer which transmitted the received data packet and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the destination host computer.
15. responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination IP address are not on the same one of either the 1st network medium or the 2nd network medium, the link layer protocol communicates a reply data packet to the source host	50. responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the 1st network medium or the 2nd network medium, the link layer protocol communicates a reply data packet to the source

computer which transmitted the received data packet; the reply data packet comprises an address pairing; and wherein the address pairing comprises the destination IP address and a hardware physical address corresponding to a selected one of the, 1st network interface circuit or the 2nd network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet wherein, responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination IP address are not on the same one of either the 1st network medium or the 2nd network medium, the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination IP address; and wherein the address pairing data packet comprises a source IP address corresponding to the source host computer which transmitted the received data packet and a hardware physical address corresponding to a selected one of the 1st network interface circuit or the 2nd network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the destination host computer.	host computer which transmitted the received data packet; the reply data packet comprises an address pairing; the address pairing comprises the destination protocol address and a hardware physical address corresponding to a selected one of the 1st network interface circuit or the 2nd network interface circuit; wherein the selected network interface circuit is coupled to the same network medium as the source host computer which transmitted the received data packet; responsive to the link layer protocol handler determining that the source host computer which transmitted the received data packet and the destination host computer designated by the destination protocol address are not on the same one of either the test network medium or the second network medium, the link layer protocol communicates an address pairing data packet to the destination host computer designated by the destination 1P address; and the address pairing data packet comprises a source protocol address corresponding to the source host computer which transmitted the received data packet and a hardware physical address corresponding to a selected one of the first network interface circuit or the second network interface circuit, wherein the selected network interface circuit is coupled to the same network medium as the destination host computer.